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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,234	07/06/2000	JOHN D. STEEVES	MBM1200	3942

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EXAMINER	
CHERNYSHEV, OLGA N	
ART UNIT	**PAPER NUMBER**
1646	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/530,234	STEEVES ET AL.	
	Examiner	Art Unit	
	Olga N. Chernyshev	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *46,49 and 55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *46, 49, 55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 23, 2004 has been entered.

Response to Amendment

2. Claim 46 has been amended, claim 48 has been cancelled and claim 55 has been added as requested in the amendment of Paper filed on January 23, 2004. Claims 46, 49 and 55 are pending in the instant application.

Claims 46, 49 and 55 are under examination in the instant office action.

3. The Text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Any objection or rejection of record, which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.

5. Applicant's arguments filed on January 23, 2004 have been fully considered but they are not deemed to be persuasive for the reasons set forth below.

Claim Rejections - 35 USC § 112

6. Claims 46, 49 and 55 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for promoting neuron repair or regeneration in a human subject suffering from spinal cord disruption by intrathecal administration of a composition comprising complement-fixing antibodies to GalC and complement proteins, does not reasonably provide enablement for the full scope of the claimed invention. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claims 46, 49 and 55 are drawn to a method for promoting neuron repair or regeneration in a human subject by administration of a therapeutically effective amount of a composition comprising complement-fixing antibodies to GalC and complement proteins. The instant specification describes the principle of the invention and provides the description of experiments on rats having spinal transection treated with composition comprising serum complement and a complement-fixing antibody administered by direct intraspinal infusion. However, the instant specification fails to provide any guidance on how to practice the claimed method in human subjects suffering from pathological conditions other than spinal cord disruption or using other routes of administration of the disclosed composition. There is no information regarding regime of administration, such as duration, quantity and ratio of the composition to be administered, as well as total lack of guidance on how to treat other "nervous system dysfunction[s]", thus requiring undue experimentation to discover how to make and use the full scope of Applicant's invention, as currently claimed.

The Declaration of Steeves and Dyer under 37 CFR 1.132 filed on March 11, 2004 provides sufficient support that an animal model of spinal cord injury, in particular a rodent model used in the instant application, is accepted in the art as predictive of the efficacy of therapeutic methods for treatment of similar injuries in humans. However, the Declaration is insufficient to overcome the rejection of the instant claims because it presents no information regarding prediction of effectiveness of the treatment of a human subject in general by administration of the disclosed composition using other possible routes of administration, such as oral, parenteral, intravenous etc., based on data obtained on rats with disrupted spinal cord treated with direct application of composition of antibodies to GalC and complement proteins.

Note that although the claimed method of treatment is not limited to intrathecal administration, with regard to claim breadth, the standard under 35 U.S.C. §112, first paragraph, entails the determination of what the claims recite and what the claims mean as a whole. In addition, when analyzing the enablement scope of the claims, the teachings of the specification are to be taken into account because the claims are to be given their broadest reasonable interpretation that is consistent with the specification. As such, the broadest reasonable interpretation of the claimed method is such that administration of a composition comprising complement-fixing antibodies to GalC and complement proteins leads to promoting neuron repair or regeneration in a human subject. One skilled in the art readily recognizes that any method of promoting neuron repair or regeneration is only reasonable and possible for damaged neuronal tissue. Moreover, because administration of complement-fixing antibodies in combination with complement proteins causes itself a demyelination of nervous tissue, one would reasonably believe that administration of such composition to an unaffected individual

would lead to harmful and potentially injurious effects, which is opposite to promoting neuron repair and regeneration. Furthermore, the instant specification, as filed, provides no evidence or sound scientific reasoning that would support a conclusion that such neuron repair and regeneration would occur when a human subject suffering from "a nervous system dysfunction" other than spinal cord disruption is treated by administration of the disclosed composition.

The instant specification, as filed, clearly fails to supply the guidance that would be needed by a routine practitioner on how to extrapolate data obtained from experiments on rodent model with surgical spinal transection and exercise the same method in a human subject having a nervous system dysfunction, which by broadest reasonable interpretation would include dysfunction due to trauma, degeneration, cancer, infectious diseases, intoxication and most of psychiatric conditions.

The instant specification does not present any guidance on how to practice the claimed method for routes of administration other than direct intraspinal infusion, which provides immediate contact of the active ingredients and the site of injury. Applicant argues that specific sections of the instant specification describe generation of antibodies for use in a human subject as well as complement proteins. However, the distinguishing property of the instant invention is the disclosure of a process of regeneration of disrupted nervous tissue by applying a composition comprising antibodies to GalC and complement proteins. Therefore, the enablement of the instant invention is established based on this distinguishing property. There is no disagreement that one skilled in the art could readily produce specific antibodies as well as prepare a composition comprising such antibodies and complement proteins. The issue at hand remains, however, that the instant specification, as filed, provides no guidance on regimes of the

administration of such compositions using routes of administration different from a direct intrathecal injection. The text on pages 28-30 only provides exemplary typical range of concentrations and a statement that ""[t]he exact ratio of antibody to complement will vary depending on the circumstances" and "the particular concentration of antibody administered will vary with the particular dysfunction and its severity" (page 28, lines 12-17 of the instant specification). Thus, provided only with a general range of concentrations of a composition comprising an antibody and a complement protein, one skilled in the art clearly would have to resort to substantial amount of undue experimentation in order to establish "a therapeutically effective amount of a composition", as well as regime of administration. In the instant case, taking into consideration that administration of anti-myelin antibodies in combination with complement proteins causes demyelination of nervous tissue, a potentially serious pathological condition, a skilled practitioner needs to know precise protocol in order to practice the claimed invention, and such protocol is not supplied by the instant specification.

In view of the lack of teachings and unpredictability of the art set forth earlier, and also the total absence of the working examples, the instant specification is not found to be enabling for a method for promoting neuron repair or regeneration in a human subject by administration of a composition comprising complement-fixing antibodies to GalC and complement proteins. It would require undue experimentation and making a substantial inventive contribution for the skilled in the art to practice the full scope of Applicant's invention, as currently claimed.

Conclusion

7. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga N. Chernyshev whose telephone number is (571) 272-0870. The examiner can normally be reached on Monday to Friday 9 AM to 5 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272-0871. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Certain papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax center located in Crystal Mall 1 (CM1). The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)0. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by Applicant or Applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers.

Official papers filed by fax should be directed to (703) 872-9306. If this number is out of service, please call the Group receptionist for an alternative number. Faxed draft or informal communications with the examiner should be directed to (571) 273-0870. Official papers should NOT be faxed to (571) 273-0870.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Olga N. Chernyshev, Ph.D.

OLGA N. CHERNYSHEV, PH.D.
PATENT EXAMINER